

Impacts of Dynamically Displaying Messages on Changeable Message Signs (DMSs)



IDIQ Contract #DTFH61-01-C-00049

Task Order Leader: Conrad L. Dudek, TTI

October 28, 2003

Contracting Organizations

- UMTRI
- TTI

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Project Objectives

- Conduct human factors studies on effects of
 - Flashing one line



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Project Objectives

- Conduct human factors studies on effects of
 - Flashing an entire one-phase message



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Project Objectives

- Conduct human factors studies on effects of
 - Alternating text on one line of two-or-more-line CMS



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Project Objectives

- Develop guidelines
- Identify & recommend changes or new provisions to the MUTCD
- Solicit feedback
- Complete final version of *Guidelines for CMS Message Design*

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Flashing/Alternating Issues

- Used by some state DOTs
- Assess:
 - Affects on driver comprehension
 - Affects on reading and comprehension time
 - Drivers' perception of important info
 - Drivers' message style preference
- Not addressed in MUTCD

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Deliverables

1. Letter report on literature review
2. Draft/final research work plan
3. Research report outline
4. Research report
 - Word document
 - Section 508A compliant document
 - Html document

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Deliverables

5. White paper
 - Word document
 - Section 508A compliant document
 - Html document
6. Project fact sheet
7. Project presentation

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Deliverables

8. Final *Guidelines for CMS Message Design* report & white paper
 - Word document
 - Section 508A compliant document
 - Html document

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Study Approach Alternatives

1. Laptop studies in 5 cities
 - Used successfully by TTI in major HF studies
 - Larger sample size
 - Regional comparisons
2. Driver simulator & laptop studies in CS + 1 city
 - Simulator closer to real-world driving
 - Smaller sample size
 - Less regional comparisons

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Study Approach Alternatives

3. Driver simulator studies only
 - Closer to real-world driving
 - Smaller sample size
 - No regional comparisons

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Staffing

- Literature review
Dudek
- Experimental design
Dudek, G. Ullman, Chrysler
- Subject recruitment
Trout, B. Ullman
- Software development (Laptop)
Schrock, Dudek

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Staffing

- Laptop studies
Trout, B. Ullman, Schrock, Dudek
- Simulator studies
Trout, Williams, Schrock, Dudek, Chrysler
- Data reduction
B. Ullman, Trout
- Data analysis
Schrock, B. Ullman, Dudek

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Staffing

- Preparation of Guidelines
Dudek, G. Ullman
- Provisions for MUTCD
Dudek, G. Ullman
- Final research report
G. Ullman, Dudek, Chrysler
- White paper
Dudek, G. Ullman

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Staffing

- Preparation of presentation
Dudek
- Preparation of fact sheet
Dudek
- 508A compliance & html documents
Brinkmann, Benoit, Dudek

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Schedule

Deliverable	Due Date
Attend kick-off meeting (video/teleconference)	21 days
Draft Project Fact Sheet	
Letter report on literature review (Draft / Revised)	40/75 days
Draft research work plan for studies	75 days
Final research work plan for studies	105 days
Site visit presentation	135 days
Research Report Outline	270 days
Draft research report (Draft)	360 days
Final research report (Final Draft / Final)	420 /462 days
Annual Meeting Presentation	May 2004
Draft white paper	405 days
Final white paper (Final Draft / Final)	450/480 days
Project Fact Sheet & Project Presentation	420 days
Final CMS Operations & Messaging Handbook & White Paper	120/150 days

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